

Exam 1

Everything on HW #1 - #5

DFA, NFA, Regex

convert from one to another.

know constructions to make

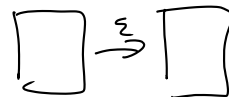
Union & $\cap$ for DFAs $\leftarrow$ product machine

$\cup$ & concat. for NFAs

know formal descriptions of NFAs & DFAs,
 $\emptyset$, $\emptyset^*$, etc

$L = \{ \text{~~ab~~ } x \text{~~y~~ } \mid x = a^n \rightarrow y \text{ has even \# of b's} \}$

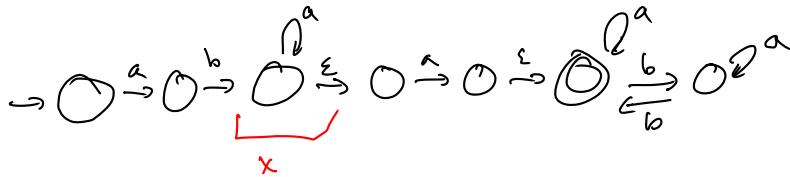
make a NFA for L .



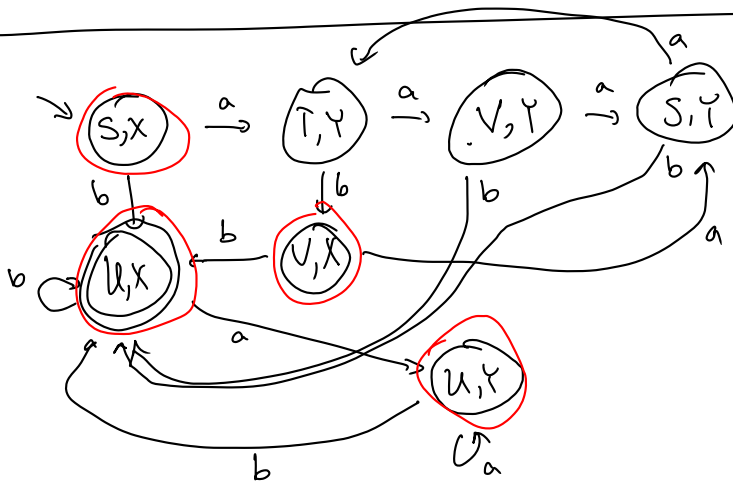
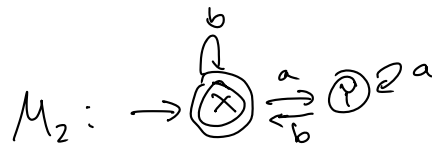
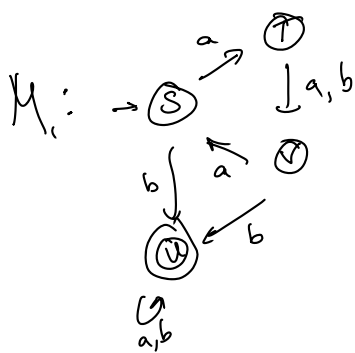
The final answer:



$\{ abxay \mid \dots \}$



A DFA for $L(M_1) \cap L(M_2)$, where:



NFA for $L(M_1) \cup L(M_2)$

